

WHAT IS CLAIMED IS:

1. An endovascular stent graft for treatment of an aneurysm in a vessel having a bifurcation comprising:

at least a main stent graft body having at least one stent secured to an outer surface of graft material, the stent graft body having a main
5 body section defining a lumen extending from a proximal end to a bifurcation, and further having an ipsilateral leg portion and a contralateral portion extending integrally from the main body section at the bifurcation to respective distal ends and defining respective lumens; and

the main body section having a length extending from the
10 bifurcation to the proximal end that is substantially less than the span of the aneurysm.

2. A method of placing an endovascular stent graft in a vessel at a bifurcation thereof where branch vessels join the vessel, for treating an aneurysm thereat, comprising the steps of:

15 selecting a bifurcated main stent graft body of the stent graft with a length substantially less than the span of the aneurysm;

placing the main stent graft body in the aneurysm unattached to a wall of the vessel with a first leg portion in a first branch vessel;

20 urging a bifurcation of the main stent graft body into a seated position against the bifurcation of the vessel to move a second leg portion in a second branch vessel;

deploying an attachment mechanism of the stent graft in the vessel about a proximal end of the main stent graft body; and

25 attaching the attachment mechanism of the stent graft to the wall of the vessel beyond the aneurysm.

3. The method as set forth in claim 2, wherein the attachment mechanism is affixed to a proximal end portion of an attachment graft tube, and the step of deploying includes delivering the attachment graft tube to

the proximal end of the main stent graft body and securing a distal end portion of the attachment graft tube to the proximal end of the main stent graft body.

4. The method as set forth in claim 3, wherein the step of
5 delivering the attachment graft tube includes placing the distal end portion of the attachment graft tube within a proximal end portion of the main stent graft body.

5. The method as set forth in claim 3, wherein the step of
10 delivering the attachment graft tube includes placing a proximal end of the main stent graft body within the distal end portion of the attachment graft tube.

6. The method as set forth in claim 3 further includes the step of
delivering an intragraft tube into the proximal end portion of the main stent
graft body and the distal end portion of the attachment graft tube, and
15 securing the intraluminal graft tube to both the main stent graft body and the attachment graft tube.

7. A method of placing an endovascular stent graft in a vessel at
a bifurcation thereof where branch vessels join the vessel, for treating an
aneurysm thereat, comprising the steps of:

20 placing a bifurcated main stent graft body of the stent graft in the aneurysm unattached to a wall of the vessel with a first leg portion in a first branch vessel;

urging a bifurcation of the main stent graft body into a seated
position against the bifurcation of the vessel to move a second leg portion
25 in a second branch vessel; and

securing the stent graft to the vessel wall.

8. A method of placing an endovascular stent graft in a vessel at
a bifurcation thereof where branch vessels join the vessel, for treating an
aneurysm thereat, comprising the steps of:

selecting a bifurcated main stent graft body of the stent graft with
a length substantially less than the span of the aneurysm;

placing the main stent graft body in the aneurysm unattached to
a wall of the vessel with a first leg portion in a first branch vessel;

5 placing an attachment graft tube of the stent graft at a proximal
end portion of the main stent graft body;

securing a distal end portion of the attachment graft tube to a
proximal end portion of the main stent graft body; and

securing a proximal end portion of the attachment graft tube to
10 the wall of the vessel beyond the aneurysm.

9. The method as set forth in claim 8, wherein the step of placing
the attachment graft tube includes placing the distal end portion of the
attachment graft tube within the proximal end portion of the main stent
graft body.

15 10. The method as set forth in claim 8, wherein the step of
placing the attachment graft tube including includes placing the proximal
end portion of the main stent graft body within the distal end portion of the
attachment graft.

20 11. A delivery system for endovascular devices, comprising:
a first sheath having a distal end and a proximal end and
containing at least a first expandable device at a proximal end;

a second sheath movable within the first sheath and having a
respective distal end and a respective proximal end, the respective
proximal end concluding distally of the first expandable device and
25 containing a second expandable device;

a first pusher associated with the first expandable device
extending thereto within the first and second sheathes from a first proximal
control pusher end exposed at the distal ends of the first and second
sheathes; and

a second pusher associated with the second expandable device extending thereto within the first and second sheathes from a second distal control pusher end exposed at the distal ends of the first and second sheathes.